

Amendment B  
U.S. Appl. 09/888,008  
June 28, 2004

### Amendments to the Claims

The following listing of claims will replace all prior versions and listings of claims in the application.

#### Listing of Claims

1. (currently amended) A method of determining enzyme activity, the method comprising:

contacting a compound selected from the group consisting of enzymes, enzyme fragments and abzymes with a labeled substrate to form a differentially-charged product;

selectively coupling either the substrate or the differentially-charged product to an ion-exchange resin thereby substantially separating the substrate from the differentially-charged product; and

detecting and quantitating the label to determine ~~determining~~ the amount of substrate remaining or differentially-charged product formed ~~using a measuring means~~, wherein the steps of coupling and detecting are performed sequentially without removing the substrate or product that is not coupled to the resin.

2. (currently amended) A method of determining enzyme activity, the method comprising:

contacting a compound selected from the group consisting of enzymes, enzyme fragments and abzymes with a labeled substrate thereby effecting the conversion of the substrate to a differentially-charged product;

stopping the conversion before all of the substrate present has been converted to the differentially-charged product;

selectively coupling either the substrate or the differentially-charged product to an ion-exchange resin thereby substantially separating the substrate from the differentially-charged product in a single step; and

detecting and quantitating the label to determine ~~determining~~ the amount of substrate remaining or differentially-charged product formed ~~using a measuring means~~;

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wherein the steps of coupling and detecting are performed sequentially without removing the substrate or product that is not coupled to the resin the stopping step and coupling step are ~~carried out concurrently or sequentially.~~

3. (Original) The method of claim 1 or 2 wherein the product is bound to the resin.

4. (Original) The method of claim 1 or 2 wherein the substrate is bound to the resin.

5. (Original) The method of claim 1 or 2 wherein the product or substrate measured is coupled to the resin.

6. (Original) The method of claim 1 or 2 wherein the product or substrate measured is in solution.

7. (currently amended) The method of claim 1 or 2 wherein ~~said~~ the enzyme is selected from the group consisting of a kinase, a transferase and a synthase.

8. (Original) The method of claim 1 or 2 wherein said method is conducted in a multiple-well format.

9. (Original) The method of claim 8 wherein the format comprises at least about 96 wells.

Claim 10 (canceled).

11 (currently amended) The method of claim 1 or 2 wherein said ~~high throughput format~~ method is conducted in a microchip.

12. (currently amended) The method of claim 1 or 2 wherein said enzyme is selected from the group consisting of glutamine fructose-6-phosphate amidotransferase (GFAT), Nitric Oxide Synthase, Methionine Aminopeptidase, Asparagine Synthetase (Asn Syn), PFK, p38

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kinase, I-kappa kinase 1, I-kappa kinase 2, TBK1, MAPKAP 2, galactosyl transferase (GTase), O-n-acetylglucosamine transferase (OGTase), and Cyclooxygenase.

13. (currently amended) A method for identifying a molecule, compound, or composition that affects the activity of an enzyme, the method comprising:

contacting the enzyme with a test sample comprising a molecule, compound, or composition;

contacting the enzyme with a labeled substrate to form a differentially-charged product;

selectively coupling either the substrate or the differentially-charged product to an ion-exchange resin thereby substantially separating the substrate from the differentially-charged product;

detecting and quantitating the label to determine ~~determining~~ the amount of substrate remaining or differentially-charged product formed ~~using a measuring means~~; and

comparing the amount of substrate remaining or differentially-charged product formed with a control, wherein the steps of coupling and detecting are performed sequentially without removing the substrate or product that is not coupled to the resin.

14. (currently amended) The method of claim 13 wherein said enzyme is selected from the group consisting of glutamine fructose-6-phosphate amidotransferase (GFAT), Nitric Oxide Synthase, Methionine Aminopeptidase, Asparagine Synthetase (Asn Syn), PFK, p38 kinase, I-kappa kinase 1, I-kappa kinase 2, TBK1, MAPKAP 2, galactosyl transferase (GTase), O-n-acetylglucosamine transferase (OGTase), and Cyclooxygenase.

15. (currently amended) The method of claim 13 wherein the control is an [[izozyme]] isozyme and the method is used to [[identifying]] identify a compound or composition that preferentially or specifically [[effects]] affects an enzyme over its isozyme.

Claims 16-26 (canceled).